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near each other; the satellite was a little more south than the shadow, and very dark, almost black. On April 28 the clouds prevented me from seeing the passage before the ball, but a little later *Titan* travelled a very short distance to the south of the ring. I regretted having been unable to follow the transit, because *Titan* must have passed along the shadow of the ring. *Titan* appeared to me bluish-green, and of brightness sensibly equal to that of the ring. On May 6, from $8^h\ 10^m$ to $8^h\ 20^m$ [Paris M.T.], *Titan* was not visible; if it did not travel just behind the ring, which the state of the telescopic image prevented me from seeing, it was occulted. On May 14 I at first noticed this satellite in front of the ring as a luminous spot; then, towards the end of its passage, the instant of separation from the ring was not easy to determine precisely. At the beginning of the observation I believed I saw an indentation on the south border of the east ansa, which might be the shadow of *Titan*, but the view was not perfect enough for me to be absolutely sure of this appearance, which was of short duration.

"I several times attempted to observe the passage of the other satellites. Unfortunately the atmospheric conditions always left much to be desired, and my efforts to observe anything have met with no success. On April 15 the view, however, was such *at instants* that I do not think it possible to have a better; yet, in spite of all my attention, I was not able to observe the transit of *Rhea*; and, at the moment, I concluded that the phenomena of this satellite, and, for the greater reason, of the smaller satellites, could not be observed except with an instrument more powerful than my excellent reflector of 216 millimetres diameter (8½ ins.), the mirror by With."

Observations of the Position-Angle of the Ring of Saturn.

By A. Stanley Williams.

The following measures of the position-angle of the major axis of the ring of *Saturn* were made with a 6½-inch reflector by Calver. The position micrometer is a small one by Troughton & Simms. The position circle, 2½ inches in diameter, is divided to 30′, and reads by a single vernier to 1′. The magnifying power used was 230. Prior to April 22 a single thin wire was employed, but, owing to the increasing narrowness of the ring, this became unsatisfactory, and the subsequent measures were made by separating the distance-webs to a distance of about 4″, and bringing the ring between them.

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Date.	G.M.T.	Observed. p	Marth. p	Δp
1891.	h m	°	°	°
Dec. 20	16 57	85·75 (8)	85·99	+0·24
21	15 53	86·03 (5)	85·99	−0·04
22	16 38	85·80 (6)	85·99	+0·19
1892.				
Jan. 1	14 47	86·05 (6)	86·02	−0·03
4	16 5	85·70 (8)	86·02	+0·32
Mar. 18	10 23	85·52 (6)	85·72	+0·20
Apr. 1	9 55	85·26 (8)	85·63	+0·37
4	9 52	85·47 (8)	85·61	+0·14
17	12 28	85·50 (8)	85·54	+0·04
22	9 48	85·75 (8)	85·52	−0·23
23	9 54	85·50 (5)	85·51	+0·01
May 6	11 9	85·67 (8)	85·46	−0·21
8	9 45	85·74 (8)	85·46	−0·28
30	9 48	84·99 (12)	85·44	+0·45
June 6	9 37	85·34 (8)	85·44	+0·10
7	9 31	85·67 (8)	85·45	−0·22
			Mean =	+0·07

The figures in brackets after the observed position-angles indicate the number of settings. In the fourth column are given the position-angles of the axis of *Saturn* according to Mr. Marth's "Ephemerides of the Satellites of *Saturn*, 1891–1892," less 270°. In other words, they are the position-angles of the major axis of the narrow apparent ellipse formed by the planet's equator; and, assuming the plane of the ring to coincide with the plane of the equator, they would likewise be the computed position-angles of the major axis of the ring.

The mean value of the residuals Δp is +3′·96, with a probable error of ±2′·29; the probable error of a single observation being ±9′·12. The telescope is equatorially mounted, but without clockwork. The major axis of the ring was, however, so little inclined to a parallel of declination, that the latter deficiency has probably had little or no effect on the accuracy of the measures. At any rate, judging from the above values of the probable errors, these observations appear comparable in point of accuracy with those made by other observers.

Brighton :
1893 *February* 24.

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Observations of Mars and ι Aquarii near their conjunction on 1892 November 4. By John Tebbutt.

The actual conjunction of *Mars* and *ι Aquarii* occurred rather too early for observation in this meridian, but it was quite obvious that an occultation could not have taken place. The star is No. 163 of Herr Berberich's list in No. 3,073 of the *Astronomische Nachrichten*. Two sets of ten fairly good comparisons were obtained of the planet and star with the filar micrometer of the 8-inch equatoreal. In all twenty comparisons the planet's preceding limb was observed for right ascension, but in the first set the north and in the second the south limb was observed for declination. The following are the results, the corrections for chronometer rate and refraction being insensible. The star's mean place is derived from the Greenwich Catalogues for 1872 and 1880, the result from each catalogue being weighted according to the number of individual observations on which it is founded.

	First Set.	Second Set.
	h m s	h m s
Windsor mean time of transit of Planet's limb	8 1 57·1	8 15 45·6
Star's adopted mean R.A. for 1892·0	22 0 36·21	22 0 36·21
Reduction	+2·46	+2·46
Observed Diff. R.A. of Limb and Star ...	+7·90	+8·97
Correction for Semidiameter	+0·50	+0·50
Correction for Parallax	+0·16	+0·20
Resulting Geocentric R.A. of Planet's centre ...	22 0 47·23	22 0 48·34
Geocentric R.A. of Centre from *Nautical Almanac*	22 0 47·23	22 0 48·41
Observation—*Nautical Almanac*	0·00	−0·07
	° ′ ″	° ′ ″
Star's adopted Mean Declination for 1892·0	−14 23 35·9	−14 23 35·9
Reduction	+8·2	+8·2
Observed Diff. Declination of Limb and Star ...	−1·1	−5·7
Correction for Semidiameter	−7·2	+7·2
Correction for Parallax	−3·8	−3·8
Resulting Geocentric Declination of Planet's centre	−14 23 39·8	−14 23 30·0
Geocentric Declination of Centre from *Nautical Almanac*	−14 23 38·7	−14 23 30·7
Observation—*Nautical Almanac*	−1·1	+0